

ABSTRACT

A nonlinear optical chromophore having the formula D- π -A, wherein π is a π bridge including a thiophene ring having oxygen atoms bonded directly to the 3 and 4 positions of the thiophene ring, D is a donor, A is an acceptor, and the oxygen atoms are further substituted with a fluorinated group comprising at least three fluorines is described. Some examples of fluorinated groups comprising at least three fluorine atoms are 2,2,2-trifluoroethyl; 2,2,3,3,3-pentafluoropropyl; 2,2,3,3,4,4,4-heptafluorobutyl; 2,2,3,3,4,4,5,5,5-octafluoropentyl; 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-1-octyl; 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctyl; 1-trifluoromethyl-2,2,2-trifluoroethyl; 1-trifluoromethyl-2,2,3,3,3-pentafluoropropyl; 2,3,4,5,6-pentafluorobenzyl; and (2,3,4,5,6-pentafluorophenyl)ethyl.